

DELPHI SERIES



FEATURES

- ◆ Fully integrated point-of-load DC/DC converter for low component count solutions
- ◆ Small footprint and low profile : 15mm x 15mm x 3.5mm (SMD)
- ◆ Input voltage range from 4.5V~ 5.5V and 7V ~ 13.2V.
- ◆ 10A DC output current
- ◆ Output adjustable 0.8V to 3.3V
- ◆ Monotonic startup into normal and pre-biased loads
- ◆ Fast transient response
- ◆ Enable function
- ◆ Moisture sensitivity level (MSL) 3
- ◆ Lead free and RoHS compliant package
- ◆ Lead free reflow process compatible

Integrated, Non-Isolated, Point of Load, DC/DC Power Modules: 4.5~5.5V_{in} and 7~13.2V_{in}, 0.8-2.5V/ 10A_{out}

The MCM12S10Q, 4.5~5.5V and 7V~13.2V input, single output, fully integrated non-isolated point of load DC/DC converters are the latest offering from a world leader in power systems technology and manufacturing – Delta Electronics, Inc. This product family provides up to 10A of output current or 33W of output power in an industry standard, compact, IC-like, molded package. It is highly integrated and requires few external components to provide the point-of-load function. Copper pads on the back of the module in close contact with the internal heat dissipation components provide excellent thermal performance. These converters hence possess outstanding electrical and thermal performance, as well as extremely high reliability under highly stressful operating conditions. Operating over both the input voltage ranges 4.5V to 5.5V and 7V to 13.2V, the MCM12S10Q supports an output voltage range from 0.8V to 3.3V, set by a single resistor. The MCM12S10Q is packaged in a thermally enhanced, compact (15mm x 15mm), and low profile (3.5mm) over-molded package suitable for automated assembly by standard surface mount equipment. The MCM12S10Q is lead free and RoHS compliant.

APPLICATIONS

- ◆ UMPC
- ◆ Server
- ◆ Industrial PC and Equipment
- ◆ Point of Load Regulation
- ◆ General Purpose Step Down DC/DC

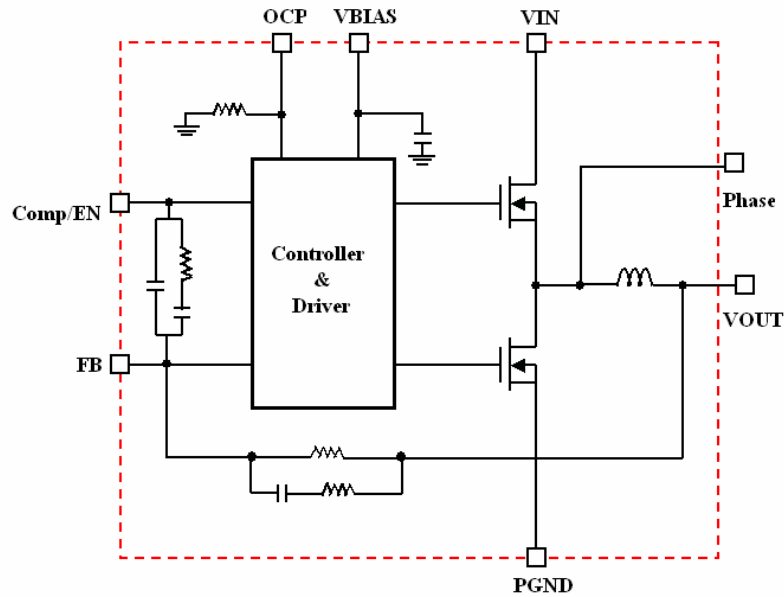
SPECIFICATIONS

GENERAL SPECIFICATIONS			OUTPUT SPECIFICATIONS		
Input Voltage	Typical	4.5~5.5V and 7V ~ 13.2Vdc	Voltage Accuracy	Typical	2%
Switching Frequency	Typical	300KHz	Voltage Adjustment	Typical	0.8V ~ 2.5 V
Turn-on time	Typical	20 mS	Line Regulation	Typical	0.2%
Operating Temperature		-40°C ~ 125°C	Load Regulation	Typical	0.2%
Size	10A	15mm x 15mm x 3.5mm	Ripple & Noise	Typical	40 mV (10A)

MODEL LIST

Model Name	Packaging	Input Voltage	Output Voltage	Output Current	Efficiency 12Vin, 2.5Vo, full load
MCM12S10Q A	SMD	4.5~5.5V and 7 ~ 13.2Vdc	0.8V ~ 2.5Vdc	10A	88.5%

SIMPLIFIED BLOCK DIAGRAM

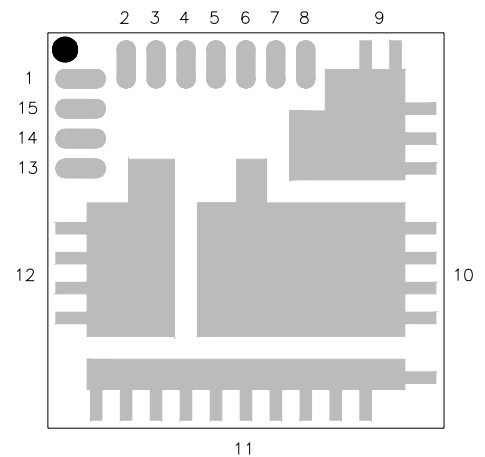


PACKAGE INFORMATION

Table 1. Pin Description

Pin	Symbol	Description
1	Comp/EN	Module enable
2	PGND	Power Ground
3	VBIAS	Bias Supply
4	N.C	
5	N.C	
6	PGND	Power Ground
7	OCP	OCP Set Point
8	N.C	
9	VIN	Power Input
10	PHASE	Phase Node
11	PGND	Power Ground
12	Vo	Output Voltage
13	Vo	Output Voltage
14	N.C	
15	FB	Feedback Input

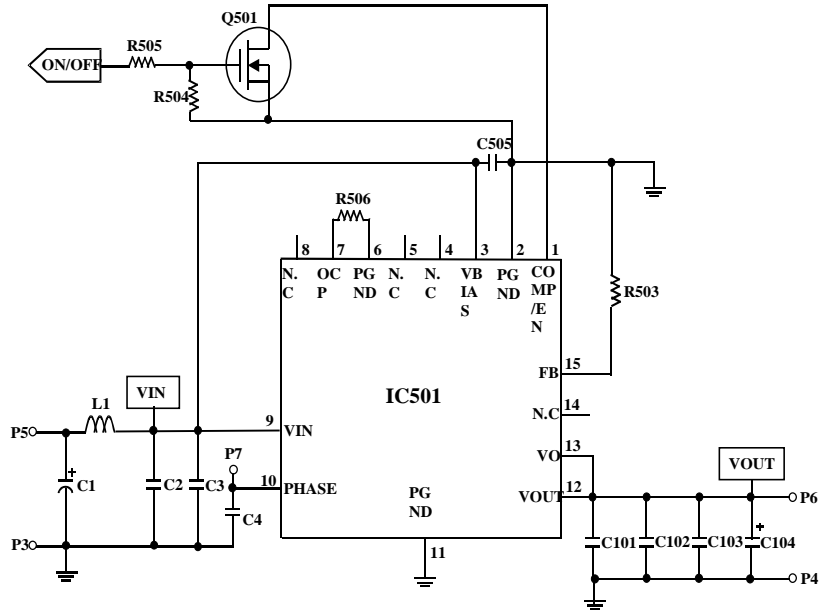
BOTTOM VIEW



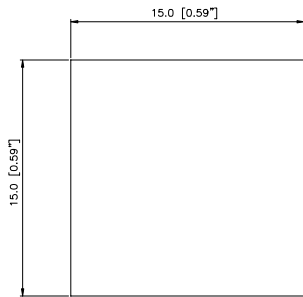
MCM12S10Q
(15mm x 15mm x 3.5mm)



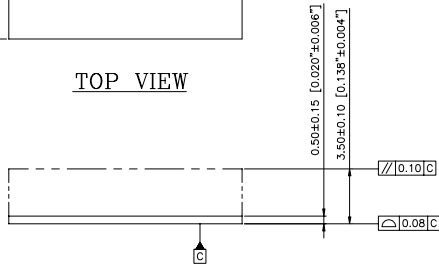
REFERENCE CIRCUITRY FOR GENERAL APPLICATION



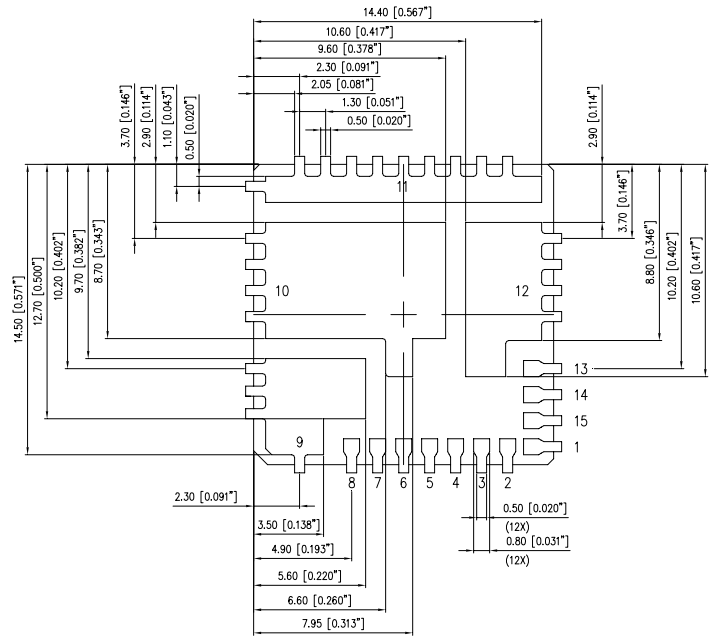
MECHANICAL DRAWING



TOP VIEW



SIDE VIEW



BOTTOM VIEW

CONTACT: www.delta.com.tw/dcdc

USA:

Telephone:
 East Coast: (888) 335 8201
 West Coast: (888) 335 8208
 Fax: (978) 656 3964
 Email: DCDC@delta-corp.com

Europe:

Telephone: +41 31 998 53 11
 Fax: +41 31 998 53 53
 Email: DCDC@delta-es.tw

Asia & the rest of world:

Telephone: +886 3 4526107 x6220
 Fax: +886 3 4513485
 Email: DCDC@delta.com.tw

WARRANTY

Delta offers a two (2) year limited warranty. Complete warranty information is listed on our web site or is available upon request from Delta. Information furnished by Delta is believed to be accurate and reliable. However, no responsibility is assumed by Delta for its use, nor for any infringements of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Delta. Delta reserves the right to revise these specifications at any time, without notice